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COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS.

U. S. Department of Agriculture
and State Agricultural Colleges
Cooperating.

States Relations Service, Office
of Extension Work, North and West,
Washington, D. C.

EXTENSION WORK WITH WOMEN no. 5

SUGGESTIONS FOR HOME DEMONSTRATION AGENTS REGARDING
FUEL CONSERVATION IN HOUSE LIGHTING.

The following outline, compiled by the United States Fuel Administration offers valuable suggestions that may readily be used as the basis of a lecture demonstration on conservation of fuel through household lighting, if adapted to suit local conditions. The agent may perhaps in addition suggest checking up the actual saving of gas and electric current accomplished by reading the household meter at regular intervals. Interesting possibilities in the way of illustrative material for such a talk will suggest themselves, as for example light diffusing and light absorbing shades, efficient and inefficient gas burners and electric lamps, direct and indirect lighting systems, and the like. Much of the material may be adapted for use in localities where kerosene lamps are used. Lighting companies and dealers in lighting fixtures will probably be glad to cooperate by loaning exhibit material and making helpful suggestions. The agent is cautioned however against any action that may appear to advertise exclusively the products of any particular concern. She should invite the cooperation of all local dealers, and discuss types and not makes of fixtures.

The outline contains valuable suggestions as to methods of procedure, that might be adapted for use in community or county fuel-saving projects. An outgrowth of such a project should be a record of the amount of gas, electricity or oil actually conserved over a definite period of time by the households taking part in the project.

Very truly yours,

Louise E. Ward

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Introductory

- A. Conservation of fuel by conservation of light is a war measure. Set forth the relation of coal to steel; and steel to war.
- B. Proper conservation of light means also
 - 1. More efficient illumination;
 - 2. Better eyesight: Proper conservation, as advocated by the United States Fuel Administration does NOT mean light at expense of eyesight.
 - 3. Lower light bills.

In Public Places

- A. "Light enough and just enough for the period of the war" is the principle of lighting now applied in public places.
- B. Lightless Night Order of United States Fuel Administration.
- C. Voluntary conservation of light by hotels
 - 1. Taking out 1/3 bulbs:
 - 2. Hanging tag over empty socket: "This lamp has been removed at the request of the United States Fuel Administration to save coal;"
 - 3. Amount of fuel to be saved _____

What Homes Are Asked to Do

- A. Apply same principle of lighting as above--i.e. save 1/3 unless use of light has already been reduced to economical minimum. Figuratively speaking, tag the lights. Good Americans and Light Conservation. Gasolineless Sunday shows the immediate response of American public to patriotic need. When householders realize great coal waste in illumination, will make same response. Every woman is eager to do her part. Needs only to be told how.
- B. Relation of light to fuel.
 - 1. Artificial gas generated by coal
 - 2. Electric power generated by coal

C. Estimate of possible saving.

1. Gas. Five incandescent burners substituted for open flame burners in use four hours a day will save in one year approximately one ton of fuel.
2. Electricity. Each 40-watt lamp burning on an average 4 hours a day, uses 272.6 pounds of coal a year. Eliminating 8 40-watt lamps from a home means saving 1 ton of coal a year.

How to Save Light in Home

A. In family-gathering rooms, viz, living room, dining-room and kitchen.

1. Living Room: "Back to the family living room". Concentrate the evening life of the family in this room. Tendency of members of modern families to work in own rooms.
 - a. Use an efficient scientific table lamp for reading, study and all work requiring concentration of light on work. When close work is being done use table lamp and turn out side lights and over-head lights or at least $\frac{1}{3}$ of overhead. For general illumination, eliminate the table lamp and burn only overhead lights and use only $\frac{1}{3}$ of bulbs unless waste has already been cut out. Do not use side lights unless room has no other fixtures in which case attach a drop light to the fixture or equip fixture with proper light-diffusing glass shade. Side lights mean cross lighting, harmful to the eyes. When used for purely decorative purposes, side lights are unpatriotic and expensive because not essential.
 - b. Efficient, scientific table lamp requires
 - (1) At least a 40-watt lamp if there is only 1 socket in lamp; two 25-watt lamps if it has 2 sockets;
 - (2) Shade that conceals light source from the eyes,
 - (3) Shade of a shape (e.g. mushroom) that distributes light evenly over table surface;
 - (4) Shade of material that does not absorb light--should be translucent, not transparent nor opaque. Silk is wasteful because it absorbs light, especially if silk is dark. If it is yellow silk outside and lined with highly glazed satin or white silk, it may be efficient. Art glass is very wasteful--the stained glass is thick

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... Five incandescent burners substituted for ...
... day will save in one year ...

... Each 40-watt lamp burning on an average 5 hours
... 275.5 pounds of coal a year. Eliminating ...
... save from a home means saving 1 ton of coal a year.

How to save light in home

... family-gathering rooms, viz., living room, dining-room and
... kitchen.

1. Living Room: "Back to the family living room". Concentrate
the evening life of the family in this room. Tendency of
members of the family to congregate in two rooms.

2. Use an efficient scientific table lamp for reading,
study and all work requiring concentration of light
on work. When close work is being done use table
lamp and turn out side lights and over-head lights or
at least 1/3 of overhead. For general illumination,
eliminate the table lamp and burn only overhead lights
and use only 1/3 of bulbs unless waste has already been
cut out. Do not use side lights unless room has no other
fixtures in which case attach a drop light to the fixture
or equip fixture with proper light-diffusing glass shade.
Side lights mean cross lighting, harmful to the eyes.
When used for purely decorative purposes, side lights are
superfluous and expensive because not essential.

3. Efficient scientific table lamp requires

(1) At least a 40-watt lamp if there is only one
roomed in lamp; two 35-watt lamps if it has
two rooms.

(2) Shade that conceals light source from the
eyes.

(3) Shade of a shape (e.g., mushroom) that dis-
tributes light evenly over table and chair.

(4) Shade of material that does not absorb light
should be translucent, not transparent, not op-
aque. Silk is wasteful because it absorbs light,
especially if silk is dark. If it is light,
silk shades are lined with light-colored paper
or white silk, it may be efficient. And, if
a very wasteful--one of the worst is ...

and absorbs the light. Old-fashioned porcelain in amber tones is best. Green porcelain also is good. Metal shades are heating to the eyes unless used at a proper distance from the eyes.

c. For general illumination

- (1) Semi-indirect or wholly indirect lighting is best because of its even distribution of light to all parts of a room, thus obviating the necessity for using side and table lights to get sufficient general illumination. With these systems, walls and ceilings should be light colored as a conservation measure, as they increase light diffusion whereas dark walls absorb light.
- (2) Carbon filament lamps wasteful of fuel and money. Should be replaced by Tungstens.

2. Dining Room: Primary principle -- Should be cheerfully lighted.

- a. Semi-indirect lighting, available both for gas and electricity, most economical because it illuminates the entire room as well as table surface, in contrast with the dome which illuminates only the table and leaves rest of room in semi-darkness. One central fixture all that is needed for dining room of average size.
- b. If lighted by side lights only, be sure shades are of translucent glassware, not silk.

3. Kitchen: Test of efficient lighting--Can you see in all the corners?

- a. Should be lighted from overhead so that complete distribution of light to all corners is accomplished. Light is a discourager of dirt.
- b. When fixture has 2 arms, viz, for gas and electricity, both should be equipped for use, each having light diffusing glass shade. Gas fixture should have best modern type of mantle and be equipped with by-pass or chain-pull.
- c. Average kitchen needs no stronger than 40-watt lamp.
- d. Have separate, full light opposite refrigerator if possible.

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(1) Semi-indirect or wholly indirect lighting is the most desirable type of lighting for a room, this being the most economical and most satisfactory. It is obtained by placing the light source in a fixture which directs the light downwards, so that it is reflected from the ceiling and walls, thus giving a soft, even distribution of light throughout the room. This type of lighting is most suitable for general illumination, and is also suitable for use in a room where a certain amount of light is required for reading or other work.

Approved: _____ Date: _____

While on a trip - signing visitors - 12/2/55

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1. The first of these is the fact that the majority of the population of the United States is now living in urban areas. This is a result of the process of urbanization, which has been going on since the beginning of the 20th century. The population of the United States has increased from about 100 million in 1900 to over 200 million in 1960. At the same time, the population of rural areas has decreased from about 100 million in 1900 to about 50 million in 1960. This has led to a concentration of the population in urban areas, which has had a number of important consequences. One of the most important is that it has led to a change in the way of life of the majority of the population. In rural areas, life is often more self-sufficient and more closely tied to the land. In urban areas, life is more dependent on the market and more closely tied to the city. This has led to a number of changes in the way of life, including changes in the way of thinking, the way of feeling, and the way of acting. These changes have been both good and bad, but they have been a result of the process of urbanization, which is one of the most important factors in the development of the United States.

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1. The first step is to identify the problem or goal. This involves understanding the current situation and what needs to be achieved.

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B. In occasionally used rooms -- viz: bedrooms, bathrooms, halls, closets, pantries, cellars.

1. General principle: Turn out or lower light every time one leaves the room even for comparatively short time.
2. When using gas.
 - a. Have by-pass or chain-pull on all fixtures in order that gas may be relighted instantly without touching match to it. If burner is not equipped with by-pass, most of us are actually too lazy to strike a match to relight it.
 - b. By-pass corresponds in gas lighting to switch in electricity as a means of cutting out lighting-waste.
 - c. In halls and closets, junior-size mantle is sufficient.
3. When using electricity.
 - a. In halls and closets, a 25-watt lamp is sufficient.
 - b. In bedrooms: Discourage reading in bed. It is an eye-saving as well as a fuel-saving measure.

C. Use Daylight to Fullest Extent Possible.

1. Shades should be raised after 4 o'clock on winter afternoons and daylight utilized as long as possible. Ordinarily we forget shades, shut out daylight and burn indoor light unnecessarily. We can prolong daylight at least one hour by raising shades and pushing aside hangings.
2. Window screens should be taken down as soon as no longer needed. Ordinarily screens consume $\frac{1}{3}$ of the daylight; when dirty they consume about $\frac{1}{2}$.

D. Interior decorating should promote light conservation

1. Wall paper, if being renewed should not be dark tones for such tones absorb light. Sunny yellow tones, French grays are best for living rooms; light blues and tans for bedrooms; white or very light tan or cream for kitchens.
2. Heavy hangings tending to shut out light should be discarded from windows. Substitute sheer curtains of light tones.

E. Cleaning

1. Clean bulbs and shades are essential to maximum lighting efficiency.
2. Institute clean-up day for fixtures. At same time, substitute Tungsten lamps for all carbon filament lamps.

